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Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF SECRETARY

In the Matter of )  
 )  
Amendment of Part 90 of the )  
Commission's Rules to Facilitate )  
Future Development of SMR Systems )  
in the 800 MHz Frequency Band )

PR Docket No. 93-144  
RM-8117, RM-8030,  
RM-8029

and

Implementation of Section 309(j) )  
of the Communications Act - )  
Competitive Bidding )  
800 MHz SMR )

PP Docket No. 93-253

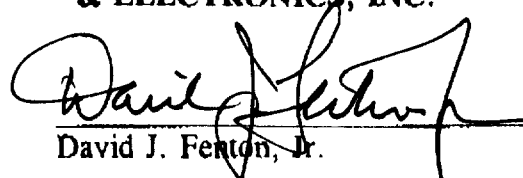
To: The Commission

REPLY COMMENTS OF  
INDUSTRIAL COMMUNICATIONS & ELECTRONICS, INC.

Respectfully submitted,

INDUSTRIAL COMMUNICATIONS  
& ELECTRONICS, INC.

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March 1, 1995

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## SUMMARY

Industrial Communications and Electronics, Inc. ("IC&E" or "the Company") generally supports the Commission's proposal to designate the upper channel block for wide-area licensing and the Commission's conclusion to define these geographic areas by Major Trading Areas ("MTAs"). IC&E agrees with CellCall Inc.'s proposal to divide the MTAs into two 100 channel blocks. In addition, the Company strongly supports the continued licensing of SMR systems on the "lower 80" channels based on the same geographic separation and channelization criteria that exist in the current SMR rules.

IC&E agrees with the Commission's finding that additional flexibility in licensing wide-area systems is needed if wide-area SMR systems are to compete with PCS and cellular. IC&E feels strongly that any retuning of incumbents must be on a voluntary basis. Nevertheless, IC&E supports the idea that a wide-area licensee may "earn" the right to mandate relocation of an incumbent system by acquiring a specified percentage of the channels in the MTA. Under either mandatory migration or earned mandatory retuning, the Commission should prohibit an MTA licensee from selectively retuning an incumbents' frequencies.

IC&E emphasizes that, if the Commission is to conduct auctions for the assignment of 800 MHz wide-area authorizations, it should allow an MTA licensee to aggregate across spectrum blocks and across MTAs, as there is a substantial interdependency among the licenses being auctioned.

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To: The Commission

**REPLY COMMENTS OF  
INDUSTRIAL COMMUNICATIONS & ELECTRONICS, INC.**

Industrial Communications and Electronics, Inc. ("IC&E" or "the Company"), pursuant to Section 1.415 of the Federal Communications Commission ("FCC" or "Commission") rules, hereby replies to the comments submitted with respect to the Commission's Further Notice of Proposed Rule Making in the above referenced proceeding which details the FCC's most recent proposal for future licensing of the 800 MHz Specialized Mobile Radio ("SMR") Service, including both wide-area and local systems.<sup>1/</sup> 47 C.F.R. § 1.415.

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<sup>1/</sup> Further Notice of Proposed Rule making, PR Docket No. 93-144, FCC 94-271, 9 FCC Rcd \_\_\_\_ (Released Nov. 4, 1994)("FNPRM").

## **I. INTRODUCTION**

1. IC&E has been engaged in the mobile communications business for 19 years. The company was established in 1976 by individuals with substantial experience in all facets of the land mobile radio industry. It currently offers a full range of two-way and microwave equipment sales, management and maintenance activities, and is engaged in the provision of communications services. The company also constructs and operates tower facilities used by its own communications customers as well as other FCC and Federal Government users.

2. IC&E is a wireless communications provider in a number of different FCC-licensed services with particular expertise in SMR, cellular and mobile communications services. IC&E constructed its first SMR in 1981, and over the past several years, has developed a multi-state SMR network throughout New England operating forty (40) 800 MHz and 900 MHz systems. The company enjoys a strong channel position in New England and operates or manages approximately one-half of the overall spectrum available for SMR licensed to it. The total population of the area serviced by IC&E's SMR system in New England is approximately 12 million people of which it is presently serving in excess of 21,000 subscribers.

3. IC&E, through its affiliate Cellular One of Northeast Colorado provides cellular service throughout Colorado Rural Service Area ("RSA") 2 serving a population in excess of 70,000 with approximately 5,000 subscribers. In Southern Florida IC&E operates 900 MHz SMR from its own "state of the art" tower facility in Miami from which it successfully serves over 5,000 subscribers throughout the Broward, Dade and

Southern Palm Beach County areas.

4. IC&E received FCC authority to develop a wide-area digital SMR network utilizing its 800 MHz frequencies to better serve its New England customers and marketplace in 1993. It has spent the last three (3) years deploying significant financial investment and engineering resources in the development of this wide-area New England system.

5. Through the extensive and varied experience IC&E management has developed over the last twenty (20) years from both an operational and technical engineering standpoint, IC&E is uniquely qualified to comment on the issues in this FNPRM proceeding which will directly affect not only its wide-area system development, but also the continued operation of its existing traditional analog systems in New England. IC&E has reviewed and considered the comments submitted by the more than eighty parties in this proceeding. IC&E wishes to emphasize for the Commission those key points which are essential to ensure the fashioning of workable rules to facilitate the future use of the 800 MHz SMR spectrum.

## **II. CHANNEL ASSIGNMENT AND SERVICE AREAS**

6. In the FNPRM, the Commission proposed to divide the existing 14 MHz of SMR spectrum into two categories for purposes of future licensing. The 10 MHz "upper block" would be comprised of the 200 contiguous SMR channels and would be licensed on an MTA basis in four blocks of 2.5 MHz each. The remaining 4 MHz, comprised of the 80 non-contiguous channels, would be licensed in groups of up to five channels on a station-by-station basis. FNPRM at ¶ 15.

**A. IC&E Supports the Commission's Proposals to Divide SMR Channels into Upper Band and Lower Band Channels For Licensing.**

7. IC&E supports the Commission's proposal to designate the upper channel block for wide-area licensing. As the Commission noted in its FNPRM and numerous commenters emphasized, a clear contiguous band of spectrum would allow wide-area licensees to use advanced technologies and allow wide-area SMR licensees to compete directly with cellular and broadband Personal Communications Service ("PCS").<sup>2/</sup> However, it must be stressed that this requirement is not a technical necessity or a prerequisite to the development and operation of a commercially viable wide-area system, as Nextel, Inc. ("Nextel") and others have tried to lead the Commission to believe.<sup>3/</sup> The creation of a clean, contiguous 200-channel band in the upper SMR spectrum would presumably serve the future interests of wide-area operators, not any identified immediate need. Clear and contiguous spectrum would make operations easier from both a technical and operational standpoint. It would standardize control and data channels, and allow a wide-area licensee even greater freedom to self-coordinate. Nevertheless, an entirely clear, contiguous band is not essential to the implementation of a viable, competitive wide-area SMR system.

**B. IC&E Supports Geographic Licensing of the "Upper Block" Channels Based on MTAs.**

8. The imposition of geographic licensing on a fully-developed, site specific service is a difficult and complicated task. No matter which geographic service area the

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<sup>2/</sup> See FNPRM at ¶ 91; See also Comments of CellCall, Inc.; Dial Call, Inc.

<sup>3/</sup> See e.g., Comments of Nextel.



Commission ultimately picks, the fit will be inexact. Although existing incumbent systems do not fit neatly into neatly defined geographic areas, IC&E supports the Commission's proposal to license the "upper block" of SMR frequencies on a geographic basis. The record clearly demonstrates the need for SMR service over a large service area. IC&E supports the Commission's conclusion to define these geographic areas by Major Trading Areas ("MTAs").<sup>4/</sup> IC&E does not support the proposal set forth by several commenters that the service areas be defined by the newly-created areas recommended by the Bureau of Economic Analysis ("BEAs").<sup>5/</sup>

**C. IC&E Favors Two 100 Channel Block Licenses in Each MTA.**

9. As described above, the Commission proposed issuing four 50-channel block licenses within each MTA, but asked for commenters to address the appropriateness of alternative block sizes both smaller and larger. FNPRM at ¶ 22.

10. IC&E supports CellCall's proposal of two 100 channel blocks. The Commission's proposal of 50 channel blocks may not offer sufficient spectrum to implement a wide-area system which could compete with other broadband Commercial Mobile Radio Services ("CMRS"). Conversely, Nextel's proposal of a single 200 channel block would eliminate competition within the broadband SMR service. Two blocks of 100 channels would ensure adequate competition in the marketplace, as well

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<sup>4/</sup> Third Report and Order, GN Docket No. 93-252, 9 FCC Rcd 7988 ¶ 99 (1994); FNPRM at ¶ 10.

<sup>5/</sup> See, e.g., Comments of AMTA, Cumulous Communications, Inc. ("Cumulous"), Advanced MobileComm, Inc. ("AMI"), PCIA, SMR WON and Total Com., Inc. ("Total").

as adequate spectrum for the provision of competitive services.

**D. IC&E Favors Continued Licensing of SMRs on the Lower 80 SMR Channels and 150 General Category Channels Under Existing Rules.**

11. The Commission concluded that it will continue licensing SMR systems on the "lower 80" channels on a local basis, and suggested two alternative approaches: i) to continue licensing these channels based on the same geographic separation and channelization criteria that exist in the current SMR rules, and ii) to discontinue site-specific licensing and instead offer licenses for individual channels or small channel blocks covering defined geographic areas. FNPRM at ¶¶ 24 & 25. IC&E strongly supports the Commission's tentative finding that the first alternative is the appropriate course. As the Commission notes, because channels are already heavily licensed, the current method of licensing would ensure continuity and minimize disruption in the further assignment of spectrum for local use.

**III. RIGHTS AND OBLIGATIONS OF GEOGRAPHIC LICENSEE**

**A. MTA Licensees Must Be Afforded Operational Flexibility.**

12. IC&E agrees with the Commission's finding that additional flexibility in licensing wide-area systems is needed if wide-area SMR systems are to compete with PCS and cellular. MTA licensees should be allowed to construct stations at any available site and on any available channel within their area. They should be allowed to "self coordinate" system modifications within their service areas, i.e., to add, subtract, move and otherwise modify their base station facilities without any need for prior Commission consent, provided they notify the Commission of the coordinates and certify compliance with co-channel interference protection and emission mask requirements. FNPRM at ¶

30.

**B. Incumbent Systems Must Be Protected by the MTA Licensee.**

13. As the FNPR notes, the impact of wide-area licensing on incumbent licensees is a crucial issue in this proceeding. FNPR at ¶ 32. There are a large number of systems already authorized and operating in the 800 MHz band, particularly in major markets. Virtually all channels in major markets are either in use or under construction.

**1. There Should Be No Mandatory Migration of Incumbent Systems.**

14. IC&E applauds the Commission's stance on Nextel's proposed "band clearing" approach. It strongly supports the Commission's tentative conclusion that "incumbent SMR systems should not be subject to mandatory relocation to new frequencies." FNPRM at ¶ 34. The comments in this proceeding reflect overwhelming vigorous and wide-spread opposition to mandatory migration.<sup>6/</sup> IC&E believes that anything "mandatory" is not reflective of the marketplace and impinges on the incumbent's operation giving the MTA licensee a distinct and unfair advantage. Decisions regarding relocation should be left to the parties and the marketplace which should continue to dictate the circumstances under which a licensee either will move to other spectrum to accommodate a MTA licensee or assign its channels to an MTA

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<sup>6/</sup> See Comments of Airwave, API, ATG, Atlantic Cellular, ABC, B&C, Bis-Man, Bilin, Bradley, Brandon, CellCall, Centennial, Chadmoore, ComService, ComUnlimited, CICS, Cumulous, Dakota, DCL, Deck, Dial Page, DLI, DruJenk, Eden, EF Johnson, ET Comm, Ericsson, Fisher, Fresno, GBRs, Gulf Coast, Joriga, Kay, Keller, Lagorio, Luczak, Madera, Morris, NashTel, Neilson, Nodak, Parkinson, PCIA, Pittencrief, Pro Tec 2, RadioComm, Raserco, Radyfield, RFComm, SMR SBC, SMR WON, So. Minn., Spruill, Stalvey, Supreme, T&K, Total, Triangle, UTC and Vantek.

licensee.

15. How do you "revisit" customer equipment that is operating and essential to that customer's daily business operation without causing problems, cost and disruption? You do not! Based on IC&E's experience, retuning is time, resource and man-hour intensive. The retuning must be done on off-hours: i.e., early morning, evenings, and weekends to insure the minimum impact on existing customers business operations. Even with these precautions existing subscribers would experience disruption.

16. The expense aspect can be addressed by a requirement that the wide-area licensee(s) bear all the costs incumbent licensees incur in retuning their transmitters and associated subscriber equipment. A more serious concern is to prevent the disruption and system redesign of licensees which have devoted substantial resources to planning and constructing integrated systems. Any provision for mandatory retuning must provide these licensees maximum protection. The Commission must clearly specify that the retuning process is not an opportunity for wide-area licensees to try to play games with incumbent licensees.

**2. There Are Not Sufficient Alternative Frequencies To Accommodate All Incumbents in the MTA Blocks on a One-to-One Basis.**

17. Just as the creation of a clean, contiguous 200-channel band at the upper end of the SMR spectrum serves the future needs of wide-area operations, the retuning of upper-band incumbents to lower band has severe potential drawbacks over and above the physical retuning of customer equipment from a technical standpoint.

18. There is a lack of sufficient alternative frequencies in many markets to accommodate all incumbents in an MTA licensing block. As a result, as the Commission properly noted, mandatory relocation could have the result of involving the Commission in decisions about which incumbents are required to relocate and which are not. FNPRM at ¶ 35. In many markets, Nextel has enough channels to retune incumbents to the lower-band channels. In New England, it could not be done.

**3. Substitute Frequencies Would Not Operate Within the Existing "Transmit Combiners" Operating on Incumbent Systems.**

19. Even if comparable replacement channels could be found in the "lower" band, and if providing 70 mile protection from the retuned site, it is extremely unlikely that these frequencies could operate within the existing transmit combiners utilized by the incumbents' systems. The closer spaced the operating channels, the more difficult and costly the system due to combining of transmit frequencies. Requiring the relocated system to use more closely spaced lower band channels would require "hybrid" combiners in lieu of the existing cavity-ferrite type combiners widely in use on existing systems.

20. The major disadvantage of these hybrid-type combiners is the high insertion loss due to close channel spacing and a much higher cost than cavity combining equipment.<sup>7/</sup> The cost increase could be double. The higher insertion loss results in reduced effective radiated power ("ERP"), which translates into reduced system coverage

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<sup>7/</sup> To illustrate the effect of this hybrid insertion loss, consider that in a typical eight (8) channel system using one (1) antenna, the combining losses are approximately 90%, making the output only 10% efficient. A 100 watt transmitter would only put out 10 watts.

and performance.

21. In addition to the higher equipment cost of hybrid-type combining equipment, in certain cases comparable service after retuning will only be accomplished through the installation of additional antennas and transmission-lines at the antenna site. This will add substantial additional cost not only for additional antennas and lines, but also site rental costs for the additional space occupied, if it is even available. In many instances, towers may be required to be structurally strengthened or completely rebuilt to accommodate the additional loads.

**C. IC&E Supports the Concept of "Earned-Mandatory Retuning".**

22. As explained above, IC&E feels strongly that any retuning must be on a voluntary basis. Nevertheless, IC&E supports the idea that a wide-area licensee may "earn" the right to mandate relocation of an incumbent system by acquiring a specified percentage of the channels in the MTA. IC&E sees this as important protection against the "last holdout" licensee in a market which would prevent for anti-competitive reasons the rollout of a wide-area system. For this reason, we would propose the following:

23. At such time as the MTA licensee has assembled 90% of the upper-band channels, a two-year period of voluntary negotiation with the remaining incumbent licensees would be triggered. At the end of the two-year period, if negotiations have not been successful, the wide-area licensee would have the right to relocate the incumbent, provided that the wide-area licensee offers fully comparable channels in the 800 MHz band, pays all costs associated with the relocation, and demonstrates that the relocated licensee will have full interference protection on the new channels. This will

accommodate Nextel's concern regarding "holdouts" and at the same time afford ample time for serious negotiations to take place to protect the interests of any straggling incumbents.

**D. The MTA Licensee Must Not Be Allowed to Engage in "Cherry-Picking".**

24. Under either mandatory migration or earned mandatory retuning, the Commission should prohibit an MTA licensee from selectively retuning an incumbents' frequencies. To allow an MTA license winner to attempt to retune incumbents on a "selective" or "individual channel basis" would be disastrous. If any retuning is to be done by a MTA licensee, total retuning must be done, and not "piecemeal retuning" of selected channels. The wide-area licensee should be required, at the option of the incumbent licensee(s), to retune all channels which comprise a licensee's integrated system. In this way, MTA licensees will neither be able to cherry-pick particularly attractive channels, nor subject integrated system licensees with unwarranted disruption of their systems by relocating only a few channels sufficient to render the incumbent licensee's frequency plan unworkable.

25. The investment in planning and resources by IC&E thus far to implement its ESMR wide-area system has been significant. Planning for a wide-area ESMR requires maximum flexibility in channelization, including the ability to reuse channels, designate channels for signalling or control, and relocate channels within one's operating area. A retuning policy that does not include an integrated system approach is an invitation to anti-competitive activities at minimal cost and should not be considered.

#### **IV. COMPETITIVE BIDDING ISSUES**

26. In the Notice, the FCC tentatively recommended the use of a competitive bidding process that paralleled closely the model adopted for PCS spectrum auctions.<sup>8/</sup> FNPRM at ¶¶ 72-106. That approach would include the use of simultaneous multiple round auctions for wide-area authorizations, but single round sealed bid auctions for local licenses, with appropriate upfront payments, down payments, and bid withdrawal, default and disqualifications rules. The Commission also proposed the application of unjust enrichment provisions, performance requirements, and anti-collusion rules. Because the vast majority of those filing Comments in this proceeding agreed with AMTA's position that the Commission lacks statutory authority to use competitive bidding procedures to award 800 MHz SMR licenses,<sup>9/</sup> there were relatively few pleadings which addressed the FNPR's proposal regarding competitive bidding procedures in any detail.

##### **IC&E Supports the Pre-Auction Forming of Bidding Consortia.**

27. IC&E emphasizes that, if the Commission is to conduct auctions for the assignment of 800 MHz wide-area authorizations, it should allow an MTA licensee to aggregate across spectrum blocks and across MTAs, as there is a substantial interdependency among the licenses being auctioned.

28. IC&E supports the Commission's rules prohibiting collusion. FNPR at ¶

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<sup>8/</sup> See Second Report and Order, PP Docket No. 93-253, 9 FCC Rcd 2348 (1994), recon. Second Memorandum Opinion and Order, FCC 94-215 (adopted August 12, 1995, released August 15, 1994).

<sup>9/</sup> See, e.g. Comments of AMTA, CellCall, Dakota, Morris, AMI, SMR WON, PCIA, EFJ, Dial Call and Ericsson.



86. It wishes to emphasize that within that framework (identification on applications of all parties with whom they have entered into any consortium arrangements, joint ventures partnerships or other agreements or understandings that relate to the competitive bidding process) the Commission should explicitly allow the forming of pre-auction bidding consortia.

**V. CONCLUSION**

WHEREFORE, IC&E respectfully requests that the Commission adopt rules in this proceeding in a manner consistent with these reply comments.

Respectfully submitted,

**INDUSTRIAL COMMUNICATIONS  
AND ELECTRONICS, INC.**

Dated: March 1, 1995